

FIG. 1

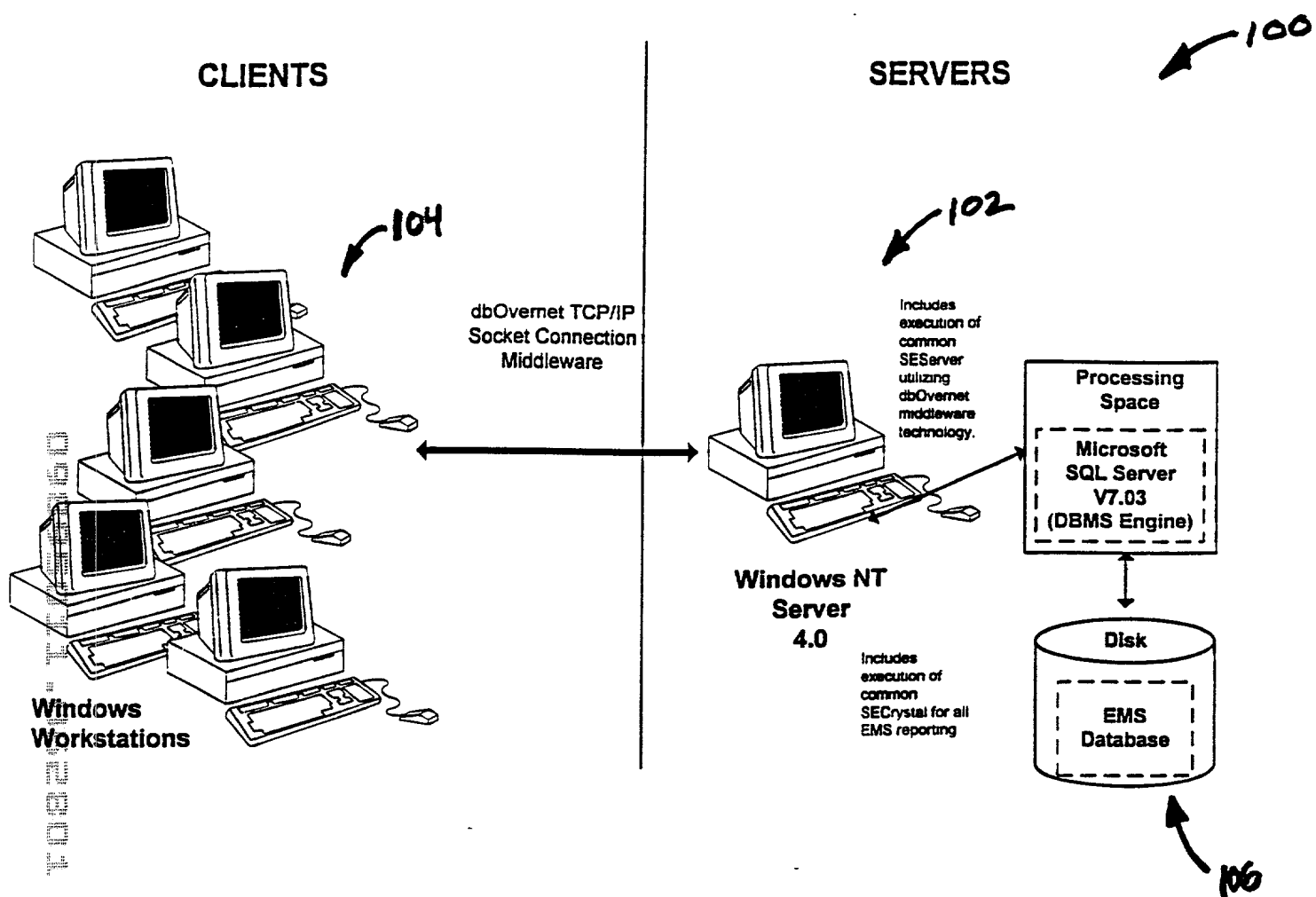


FIG. 2

Companies Subject Area (ERD)

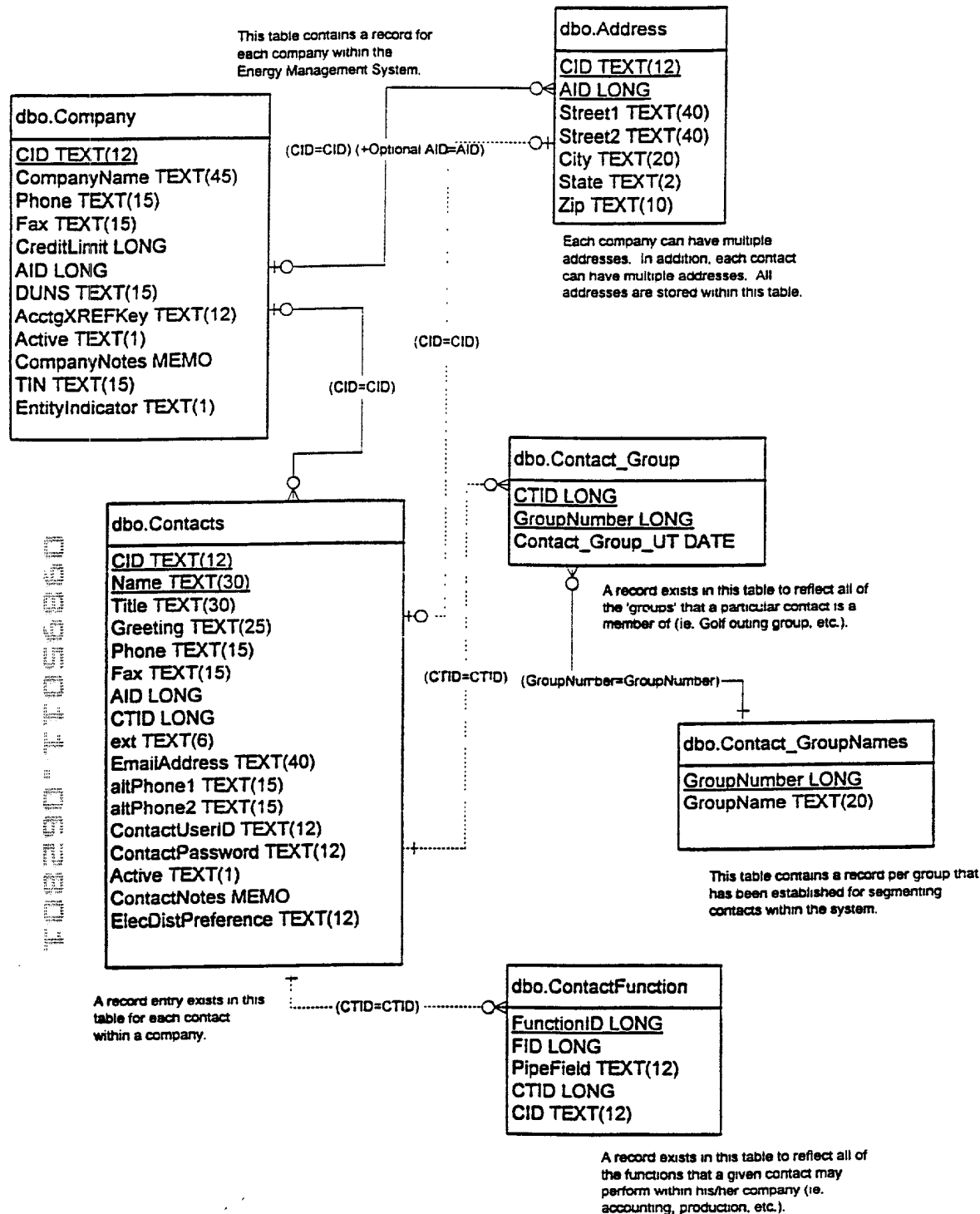


FIG. 3A

Contracts Subject Area (ERD)

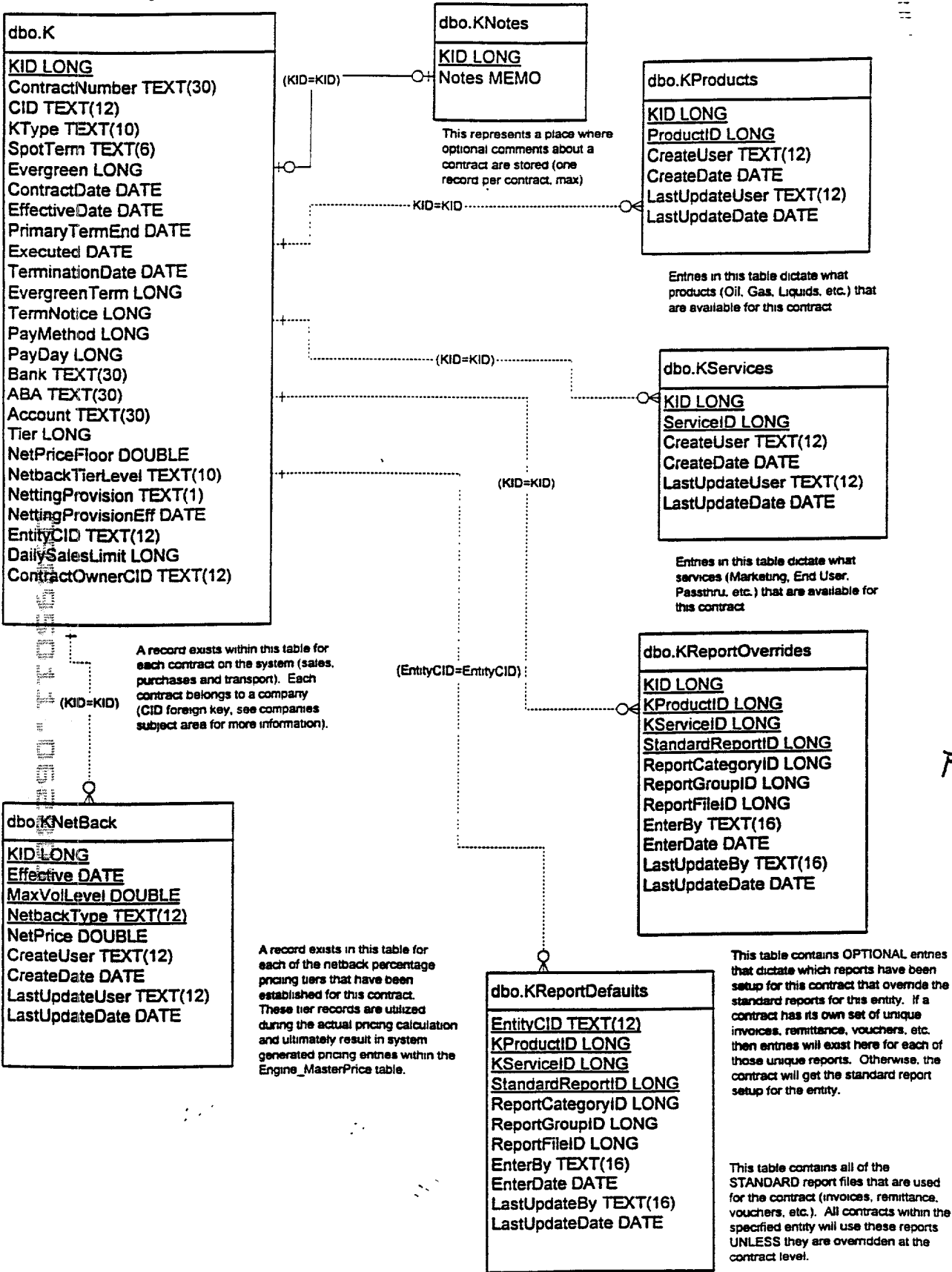
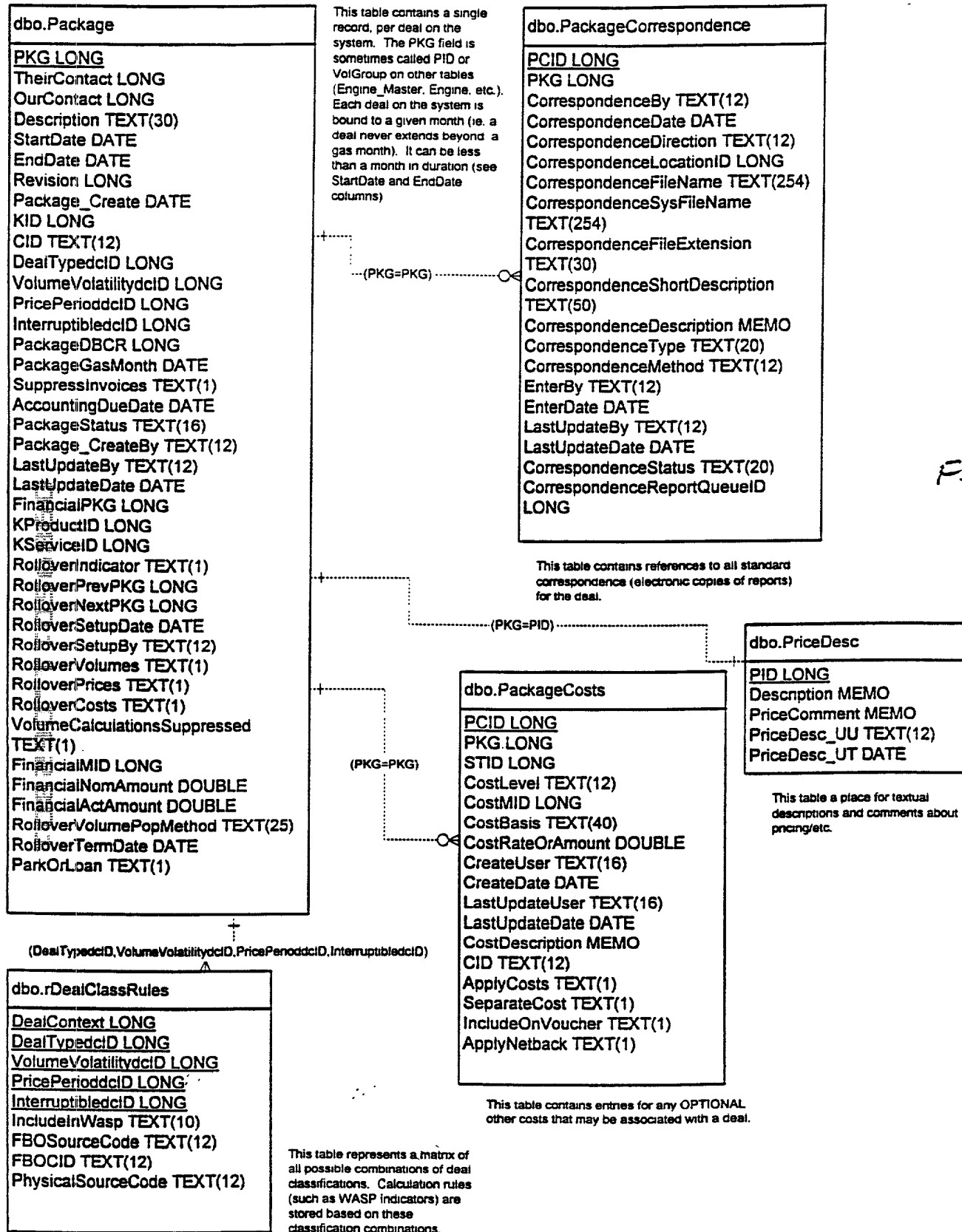


FIG. 30

Deals Subject Area (ERD) (1 of 2)



Deals Subject Area (ERD) (2 of 2)

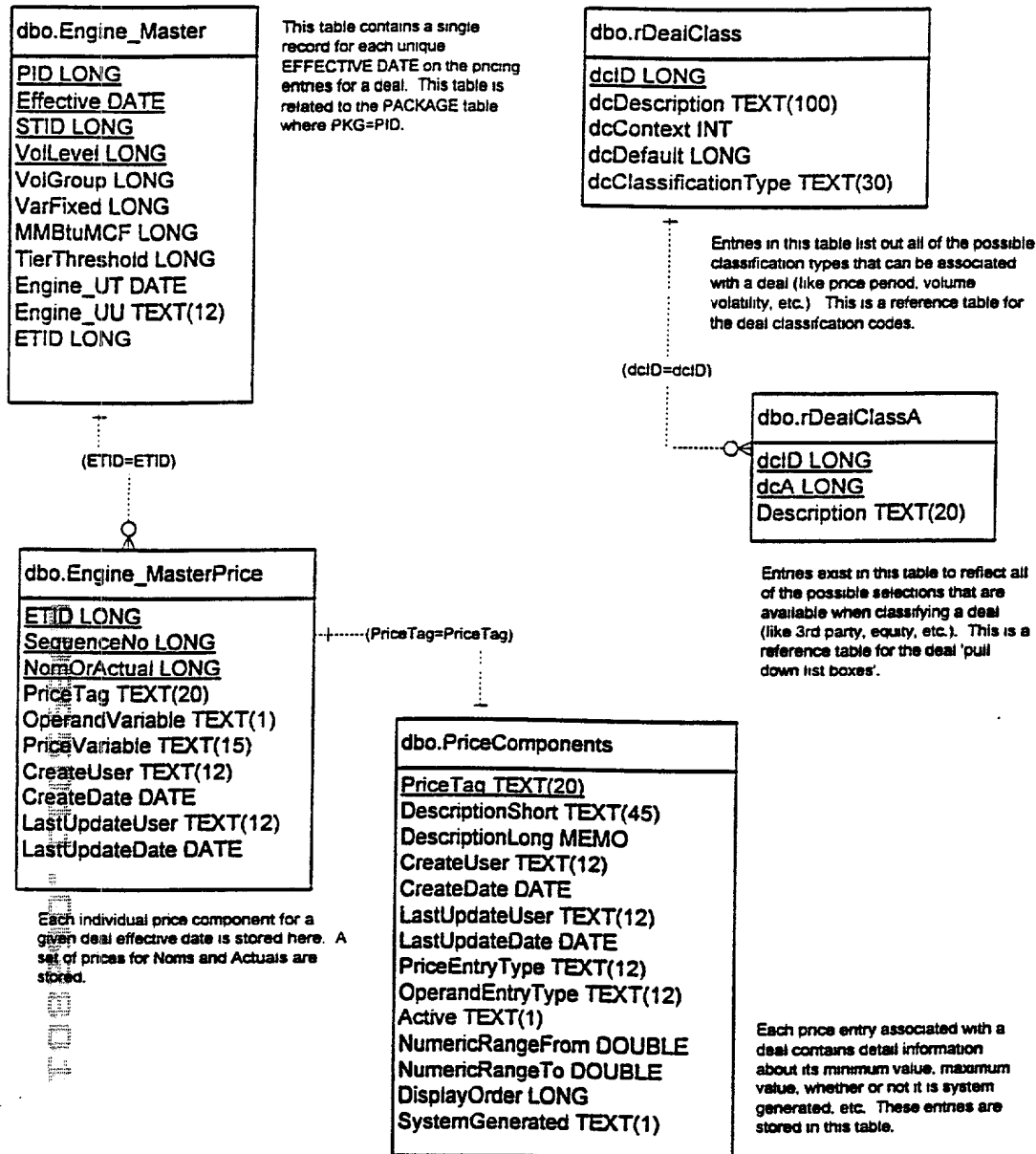


FIG. 3D

Gas Inventory Subject Area (ERD) (1 of 2)

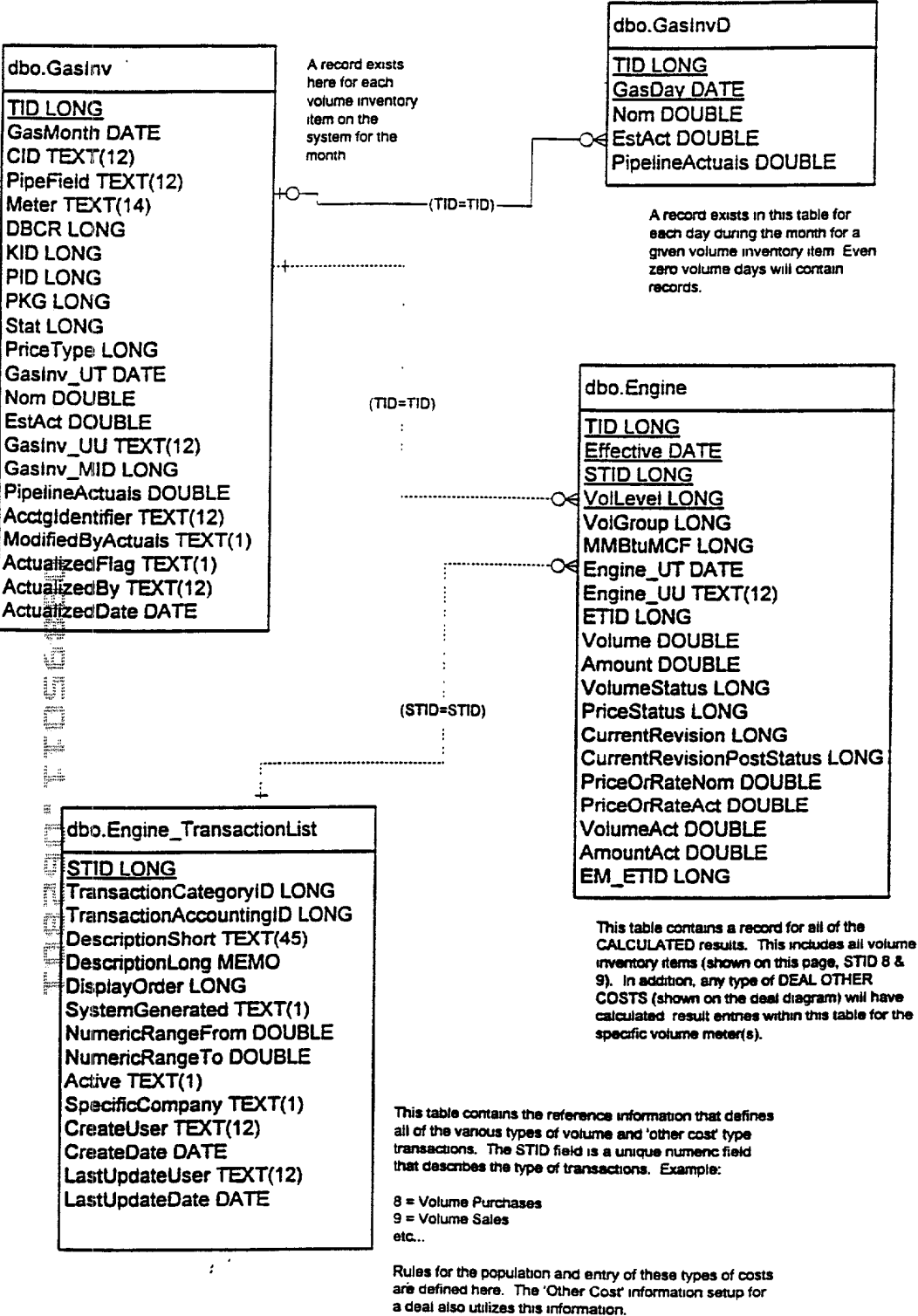


FIG. 3E

Gas Inventory Subject Area (ERD) (2 of 2)

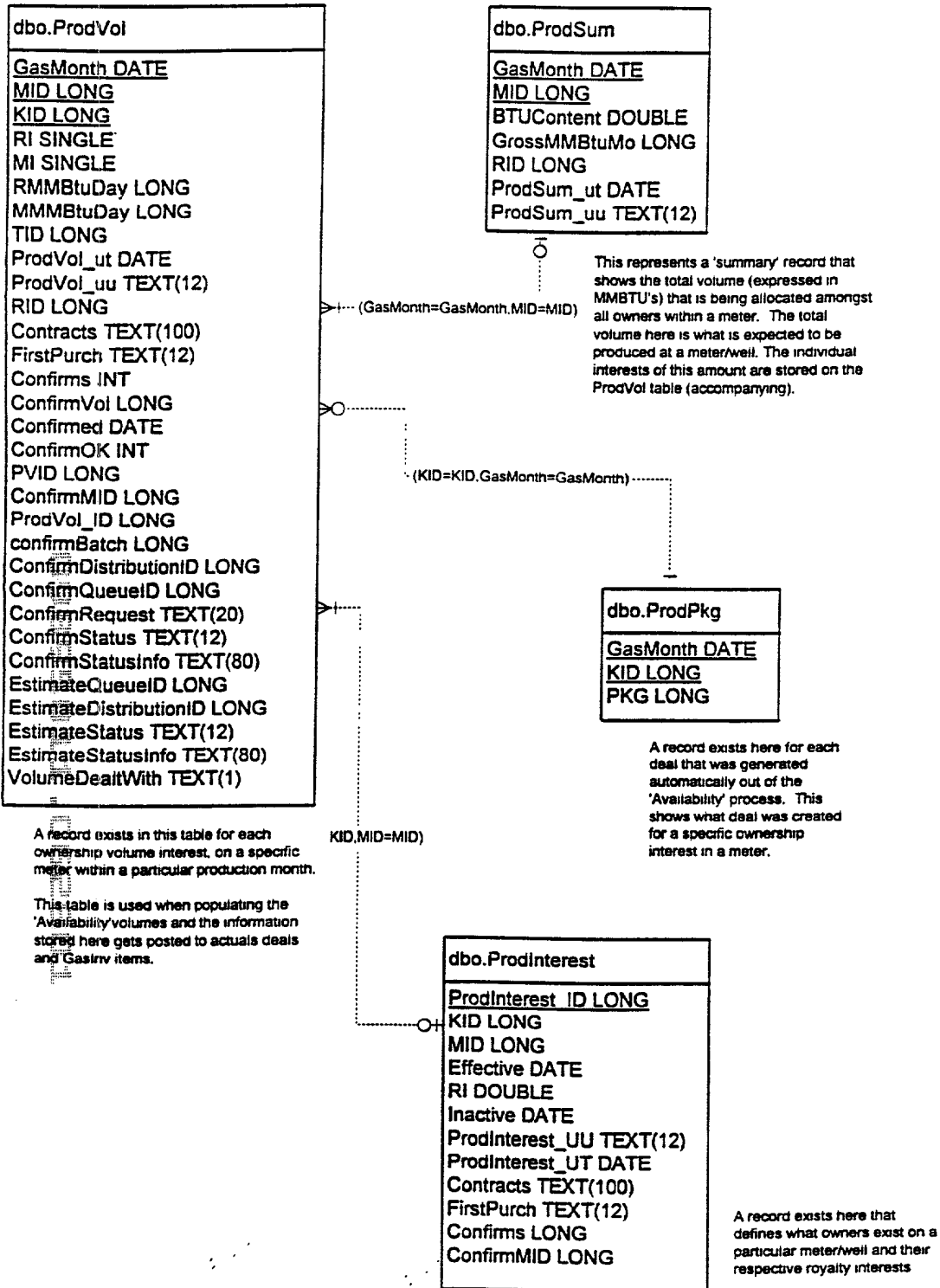


FIG. 37

Operational Subject Area – 1 of 4 (ERD)

dbo.PrinterDef

PrinterNumber LONG
DisplayName TEXT(80)
ServerPrinterName TEXT(80)
InternalPrinter TEXT(1)

All printers defined in the system are stored in this table.

dbo.ApplicationMessages

ApplicationMessageID LONG
ApplicationMessageDate DATE
ApplicationMessageText TEXT(255)

This table contains application messages that normally only print to the server console (for example when a calculation is running the messages are written here).

dbo.ExceptionCategories

ExceptionType TEXT(12)
ExceptionNo LONG
ExceptionShort TEXT(45)
ExceptionLong MEMO
CreateUser TEXT(12)
CreateDate DATE
LastUpdateUser TEXT(12)
LastUpdateDate DATE
ExceptionOrder LONG

This table contains record entries for all of the possible exception reason categories defined within the system. These reasons are based on the type of exception that occurs ('Deal', 'Pricing', etc.).

(ExceptionType=ExceptionType, ExceptionNo=ExceptionNo)

dbo.LogTable

LogEntry LONG
LogDateTime DATE
LogInfo TEXT(254)

This table is used primarily for debugging purposes and is not utilized by any screen or reporting process.

dbo.ExceptionList

ExceptionListID LONG
ExceptionType TEXT(12)
ExceptionKey LONG
ExceptionDate DATE
ExceptionSequence LONG
ExceptionEvent TEXT(45)
ExceptionNo LONG
ExceptionBy TEXT(12)
ExceptionComments MEMO
CreateUser TEXT(12)
CreateDate DATE
LastUpdateUser TEXT(12)
LastUpdateDate DATE

This table contains the actual exception event entries. The ExceptionKey and sequence columns associate the exception to the entity based on type (i.e. PKGID would be the key for ExceptionType = 'DEAL').

Fig. 36

dbo.rGasMonth

GasMonth DATE
CurrentStatus TEXT(20)
CurrentSequence LONG
CreateUser TEXT(12)
CreateDate DATE
LastUpdateUser TEXT(12)
LastUpdateDate DATE
LockedUser TEXT(12)
LockedDate DATE

One record exists in this table for every production month in the system. In addition, this table contains the CURRENT status field ('Availability', 'Sales', etc.).

dbo.rGasMonthStatus

GasMonth DATE
CurrentSequence LONG
Status TEXT(20)
CreateUser TEXT(12)
CreateDate DATE
LastUpdateUser TEXT(12)
LastUpdateDate DATE

This table represents an 'audit' table that captures the production month information EVERYTIME the status is changed. This provides for detail analysis on how long production months are left in a particular status.

(GasMonth=GasMonth)

Operational Subject Area – 2 of 4 (ERD)

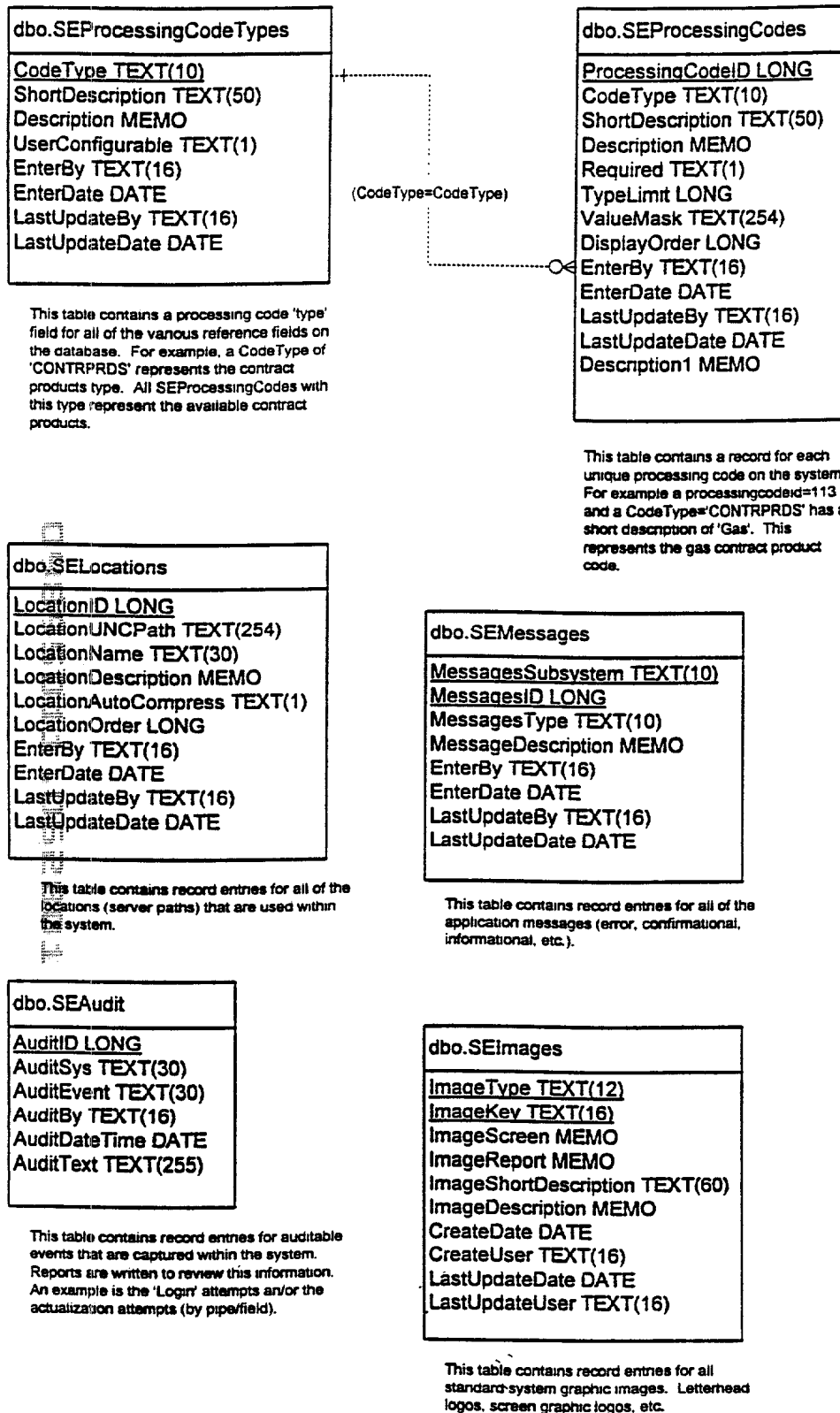


Fig. 3 it

Operational Subject Area – 3 of 4 (ERD)

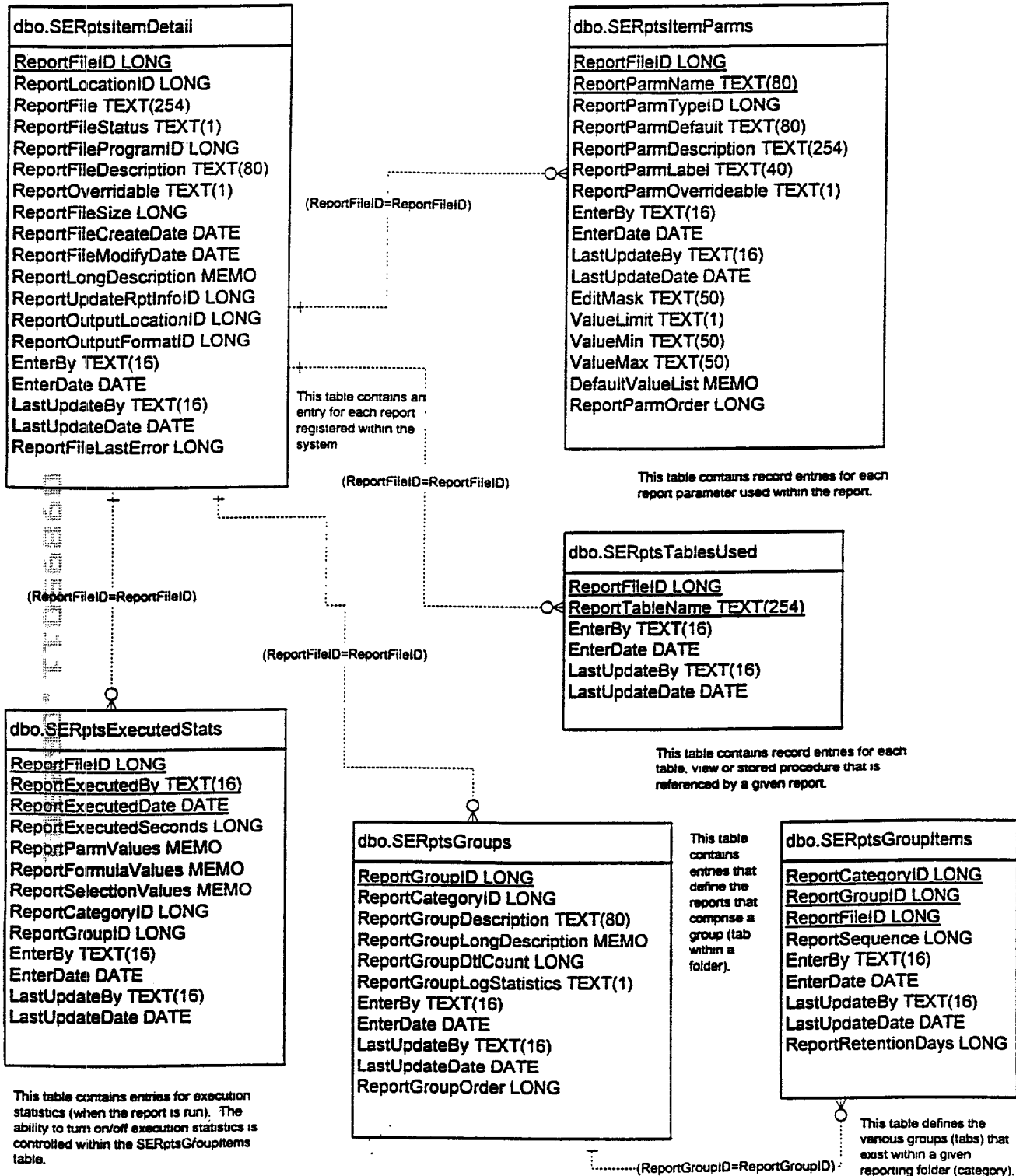


FIG. 3I

Operational Subject Area – 4 of 4 (ERD)

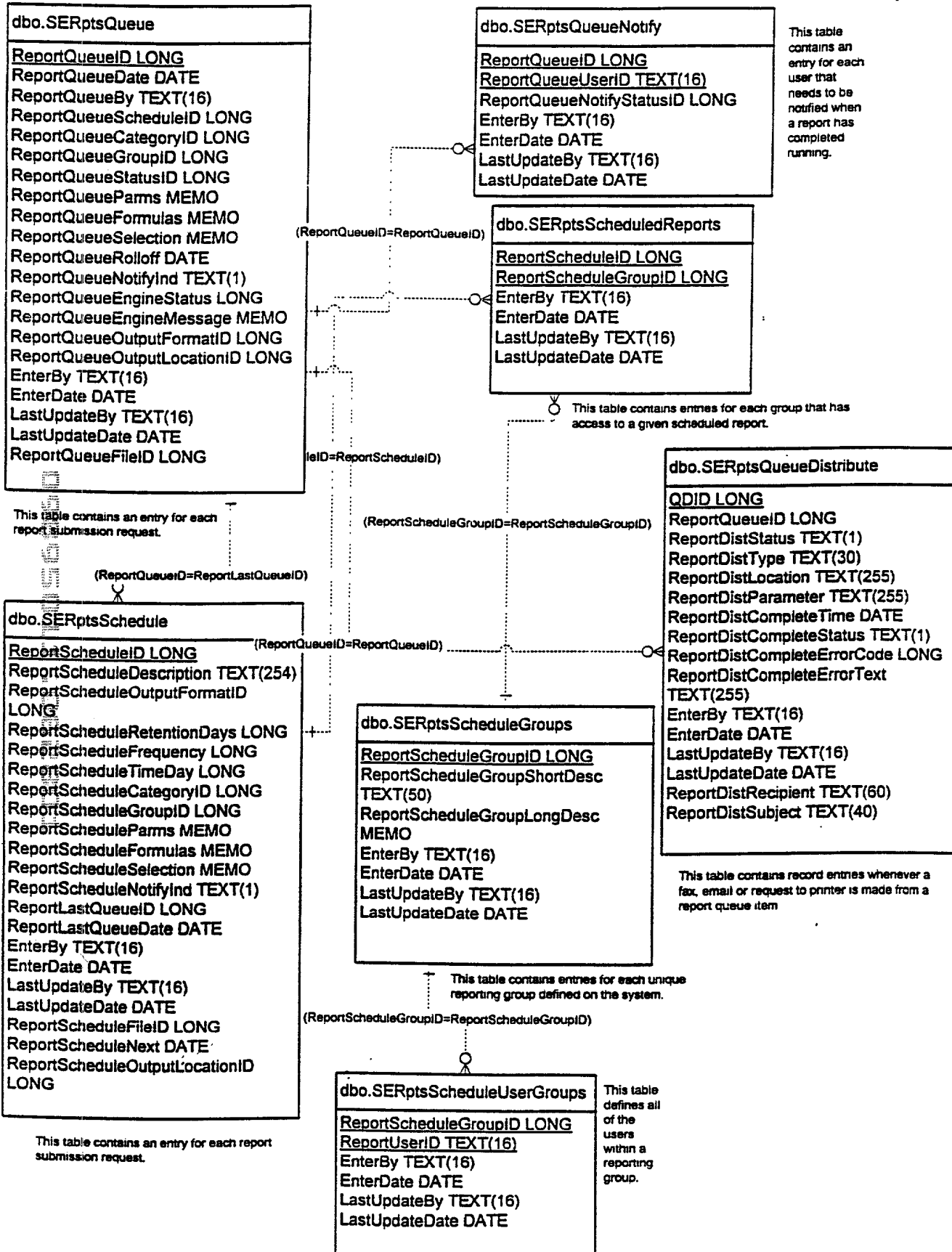


FIG. 35

Pipes & Meters Subject Area (ERD)

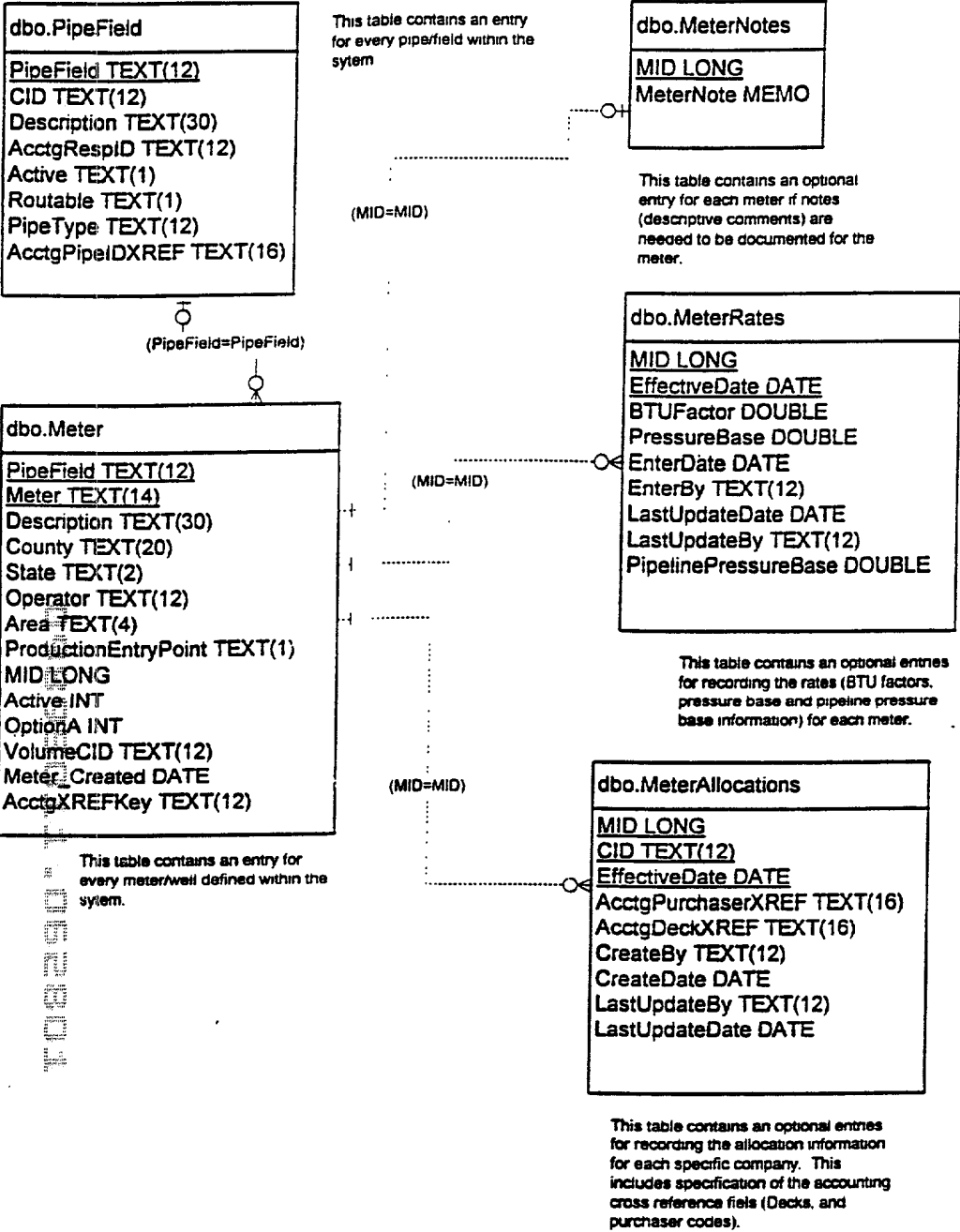


FIG. 3K

Pricing Subject Area (ERD)

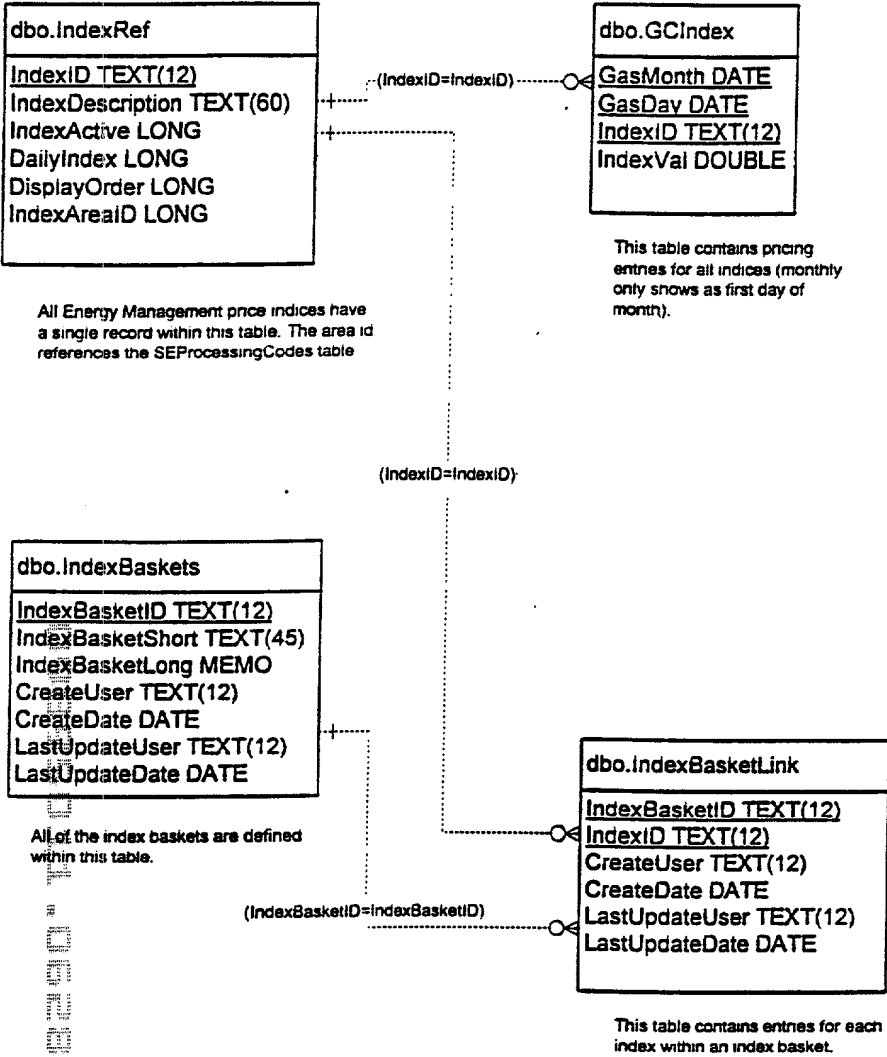


FIG. 36

Routing Subject Area (ERD)

dbo.LegRef	
<u>RecPipe</u>	TEXT(12)
<u>RecMeter</u>	TEXT(14)
<u>DelPipe</u>	TEXT(12)
<u>DelMeter</u>	TEXT(14)
<u>KID</u>	LONG
<u>LID</u>	LONG
TransportationRate	DOUBLE
GatheringRate	DOUBLE
TransBasis	TEXT(8)
FuelPercent	DOUBLE
LegRef_UT	DATE
Active	DATE
Inactive	DATE
LegRef_uu	TEXT(12)
PlantVolReduction	DOUBLE

This table contains a single record for every possible 'Leg' defined within the system. A leg is the method to move volume between meters/wells. Any rates or costs associated with these legs are stored on this record.

dbo.Leg	
<u>GasMonth</u>	DATE
<u>LID</u>	LONG
<u>RecPipe</u>	TEXT(12)
<u>RecMeter</u>	TEXT(14)
<u>DelPipe</u>	TEXT(12)
<u>DelMeter</u>	TEXT(14)
<u>KID</u>	LONG
TransportationRate	DOUBLE
GatheringRate	DOUBLE
TransBasis	TEXT(8)
FuelPercent	DOUBLE
Leg_UT	DATE
Leg_uu	TEXT(12)
TransportationRateAct	DOUBLE
GatheringRateAct	DOUBLE
TransBasisAct	TEXT(8)
FuelPercentAct	DOUBLE
PlantVolReduction	DOUBLE
PlantVolReductionAct	DOUBLE

A record is created within this table whenever actual volume is routed within a given month. The GasInv table (prctype=3) transactions represent purchase/sale legs. For every purchase there is a sale (dual entry). Any costs for volume using the leg are stored on this record.

dbo.LegDetail	
<u>LDID</u>	LONG
<u>GasMonth</u>	DATE
<u>GasDay</u>	DATE
<u>LID</u>	LONG
NomOrActuals	LONG
Step	LONG
PurchasePKG	LONG
RecMID	LONG
DelMID	LONG
Receipt	DOUBLE
FuelOrOther	DOUBLE
Delivered	DOUBLE
Balance	DOUBLE
SalesPKG	LONG
CreateUser	TEXT(12)
CreateDate	DATE
LastUpdateUser	TEXT(12)
LastUpdateDate	DATE
TransportationRate	DOUBLE
GatheringRate	DOUBLE
TransBasis	TEXT(8)
FuelPercent	DOUBLE
PlantVolReduction	DOUBLE
DailyRateUsed	TEXT(1)
LDIDPrev	LONG
PurchasePointMID	LONG
PurchasePointTID	LONG
ManualRateOverride	TEXT(1)

Entries in this table represent the actual 'hops' (routes) between the meters for the production month (nom and actual entries).

dbo.LegD	
<u>LRDID</u>	LONG
<u>LID</u>	LONG
EffectiveFrom	DATE
EffectiveThru	DATE
<u>RecPipe</u>	TEXT(12)
<u>RecMeter</u>	TEXT(14)
<u>DelPipe</u>	TEXT(12)
<u>DelMeter</u>	TEXT(14)
<u>KID</u>	LONG
TransportationRate	DOUBLE
GatheringRate	DOUBLE
TransBasis	TEXT(8)
FuelPercent	DOUBLE
LegD_UT	DATE
LegD_UU	TEXT(12)
PlantVolReduction	DOUBLE
GasMonth	DATE
TransportationRateAct	DOUBLE
GatheringRateAct	DOUBLE
TransBasisAct	TEXT(8)
FuelPercentAct	DOUBLE
PlantVolReductionAct	DOUBLE

This area of the database provides the location for storing a DAILY leg rate for a specific leg in the system. When calculating costs first the daily rates are checked (here). If none found then the monthly rates are used.

dbo.WASResolvedRouting	
<u>ResolvedID</u>	LONG
<u>GasMonth</u>	DATE
<u>DelMID</u>	LONG
<u>RecMID</u>	LONG
<u>LID</u>	LONG
NomOrActual	LONG
Receipt	DOUBLE
FuelOrOther	DOUBLE
Delivered	DOUBLE
TransportAmount	DOUBLE
GatheringAmount	DOUBLE
Amount	DOUBLE
IncludeInWASP	TEXT(10)
DedicatedPurchasePKG	LONG
Price	DOUBLE
ResolvedReceipt	DOUBLE
ResolvedIndicator	TEXT(1)
ResolvedType	TEXT(1)
ResolvedDelivered	DOUBLE
EntityCID	TEXT(12)
KProductID	LONG
KServiceID	LONG
ResolvedReceiptAmt	DOUBLE
ResolvedDeliveredAmt	DOUBLE

This table holds the detail results of the WASP calculations ('None', 'Dedicated' and 'Common' pool totals).

Fig. 3.14

Security Subject Area (ERD)

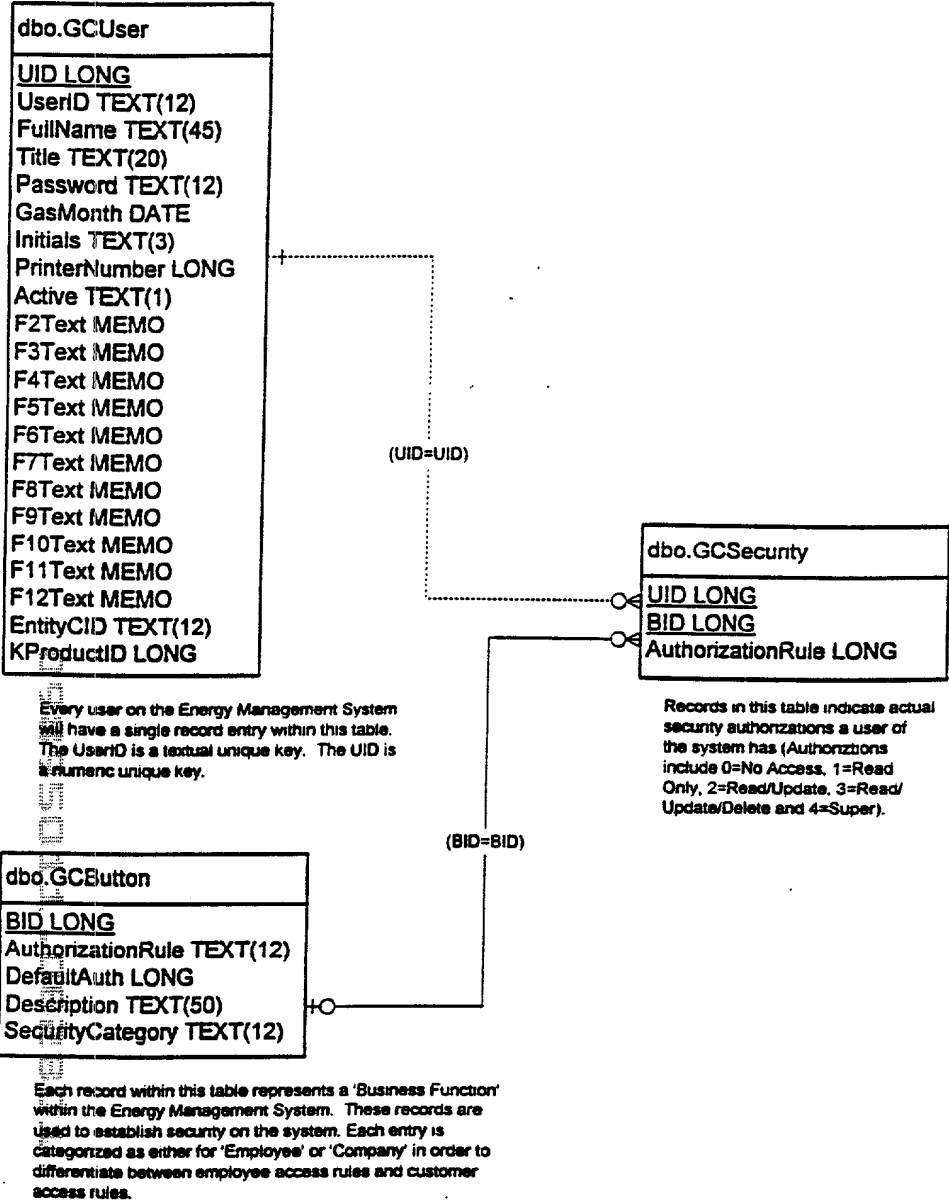



FIG. 3 N

T03290" T05660



Version
(5.06)

02/23/2001 12:53:49 pm

HEC | Gas

December, 2000 | Accounting

Printer: Accounting Printer

Personal

Price Index

Company

Availability

Deals


Rolling

Accounting

System

Start


Energy Management System



12:53 PM

ETN 61A

T03290" T056860



Energy Management System

Version (5.06)

02/23/2001 12:54:37 pm SUSAN

HEC | Gas

December, 2000 | Accounting

Printer: Accounting Printer

Personal

Price Index

Company

Availability

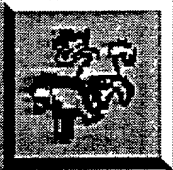
Deals

Routing

Accounting

System

User Profile Detail - [Change]



General | F2 Key | F3 Key | F4 Key | F5 Key | F6 Key | F7 Key | F8 Key | F9 Key

ID: SUSAN

Full Name: Susan Sims

Title: Dir. of Client Svcs

Password: *****

Month: December / 2000

Entity: HEC

Product: Gas

☒ Active ?

Initials: SS


Printer Number: Accounting Printer

Internal User ID: 2448

OK

Help...

Cancel



Version
(5.06)

02/23/2001 12:55:01 pm | SUSAN

HEC | Gas

December, 2000 | Accounting

Printer: Accounting Printer

Personal

Price Index

Company

Availability

Deals

Rolling

Accounting

System

View Your Reports...

Change Your Password...

Customize Your System Properties...

Exit

Start | Energy Management ...

12:55 PM

Report Viewer

Reports Submitted By You

Reports Submitted by the Scheduler

Report Name	Submit Date	Completion Status	Rolloff Date	Output Format	Error Code
Purchase and Sales By Comp	02/23/2001 12:50:50 PM	Completed	03/02/2001 12:50:50 PM	Acrobat PI	0
Deals By Business Partner	02/23/2001 12:52:30 PM	Completed	03/02/2001 12:52:30 PM	Acrobat PI	0
Supply Volume By Supplier	02/23/2001 12:56:26 PM	Completed	03/02/2001 12:56:26 PM	Acrobat PI	0
Actualization Progress	02/23/2001 12:56:26 PM	Completed	03/02/2001 12:56:26 PM	Acrobat PI	0
Vouchers (DRAFT)	02/23/2001 12:56:26 PM	Completed	03/02/2001 12:56:26 PM	Acrobat PI	0
Vouchers (DRAFT)	02/23/2001 12:56:26 PM	Completed	03/02/2001 12:56:26 PM	Acrobat PI	0
Margin Report (By WSP Pool)	02/19/2001 01:11:53 PM	Completed	03/02/2001 01:11:53 PM	Acrobat PI	0
Margin Report (By Pipe Field)	02/19/2001 01:11:53 PM	Completed	03/02/2001 01:11:53 PM	Acrobat PI	0
Sales Deals By Pipe	02/19/2001 10:38:21 AM	Completed	03/02/2001 10:38:21 AM	Acrobat PI	0
Deals By Business Partner	02/17/2001 02:57:05 PM	Completed	03/02/2001 02:57:05 PM	Acrobat PI	0
Sales Deals By Pipe	02/17/2001 02:57:05 PM	Completed	03/02/2001 02:57:05 PM	Acrobat PI	0
Remittance DRAFT Detail	02/17/2001 02:52:46 PM	Completed	03/02/2001 02:52:46 PM	Acrobat PI	0
Actualization Progress	02/17/2001 01:13:53 PM	Completed	03/02/2001 01:13:53 PM	Acrobat PI	0
WASP Deal Detail	02/17/2001 12:32:46 PM	Completed	03/02/2001 12:32:46 PM	Acrobat PI	0
Routing Details (Ultimate Sales)	02/17/2001 12:25:32 PM	Completed	03/02/2001 12:25:32 PM	Acrobat PI	0
WASP Deal Detail	02/17/2001 11:38:21 AM	Completed	03/02/2001 11:38:21 AM	Acrobat PI	0
WASP Deal Detail	02/17/2001 11:38:11 AM	Completed	03/02/2001 11:38:11 AM	Acrobat PI	0
WASP Deal Detail	02/17/2001 11:28:59 AM	Completed	03/02/2001 11:28:59 AM	Acrobat PI	0

☒ Auto Refresh ?

(this will refresh screen automatically every 10 seconds)

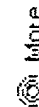


Submit Date (DESC)

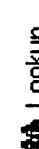
Records: 18



Refresh




More



Lookup...






Version (5.08)


02/23/2001 12:56:26 pm SUSAN


HEC | Gas


December, 2000 | Accounting


Printer: Accounting Printer


 Personal


 Price Index


 Company

 Availability

 Deals

 Routing

 Accounting

 System

System Properties

When you select 'OK' all of your preferences will be automatically saved for you and used. These preferences will even be used if the application is exited and you return later.

☒ OK ☒ Cancel

Your Window Properties

Default Window Properties

Database Connection Properties

Email

Application Image

☒ Stretch?

☒ Transparent?

Updateable Non-Grid Fields

Protected Non-Grid Fields

Grid Title

Updateable Grid Fields

Protected Grid Fields

SELECTED Grid Fields

Background Color:

Updateable Fields


Protected Fields


Grid Title Bar

Grid Updateable Fields

Grid Protected Fields

Grid Selected Fields

**Energy Management System**




Version
(5.06)


02/23/2001 12:56:42 pm | SUSAN


HEC | Gas


December, 2000 | Accounting


Printer: Accounting Printer


Personal


Price Index


Company


Availability


Deals


Routing


Accounting


System


Enter or Update Daily/Monthly Prices...


View (Graph) Price Index Information...

Add or Update Index Areas...

Add or Update an Index...

Add or Update an Index Basket...

Add or Update Price Index Exceptions...

Price Index Reports...

Start

Energy Management ...



12:56 PM

Energy Management System

Version (5.05)

02/23/2001 12:57:28 pm | SUSAN

HEC | Gas

December, 2000 | Accounting

Printer: Accounting Printer

Personal

Price Index

Company

Availability

Deals

Routing

Accounting

System

Daily Index Price Updates

You may change the price (if you have security privileges)

Display Order

Index	Name	Price
DGDEF(PB)1	Daily Gas Daily Midpoint El Paso Permian	\$6.2100
DGDNORTHLPB	Daily Gas Daily Midpoint Northern (Mid-115)	\$6.1550
DGDTXWVAHA	Daily Gas Daily Midpoint Tex. Intra-Waha	\$6.2000
DGDTXWVAHA	Daily Gas Daily Midpoint Transwestern Permian	\$6.2100
DGDCARTHAGE	Daily Gas Daily Midpoint Garbage Hub (Late)	\$6.1750
DGDKOCHLETX	Daily Gas Daily Midpoint Koch (Zones 182)	\$6.0000
DGDLSTX	Daily Gas Daily Midpoint Lone Star	\$6.0300
DGDMRT-ML	Daily Gas Daily Midpoint MRT Mainline	\$6.3150
DGDMRT-WL	Daily Gas Daily Midpoint MRT West Leg	\$6.2700
DGDNGL-TEXOK	Daily Gas Daily Midpoint NGPL TexOK (West)	\$6.2100
DGDNGL-TEXOK	Daily Gas Daily Midpoint NGPL TexOK (East)	\$6.2050
DGDTENN-100	Daily Gas Daily Midpoint Tennessee 100 Leg	\$6.1900

Records: 211

< LOOKUP >

Friday - 12/01/2000

Weekend Copy!

Help...

Exit

Prices By Month

Index Prices By Month

Sources: Inside F.E.R.C.'s 'Gas Market Report' and Financial Times Energy 'Gas Daily Report'.

Monthly index prices only contain price entries on the 1st day of the month and these prices are used throughout the month.

Month: December / 2000

Area or Pipe/Field: GDA Permian Basin Area

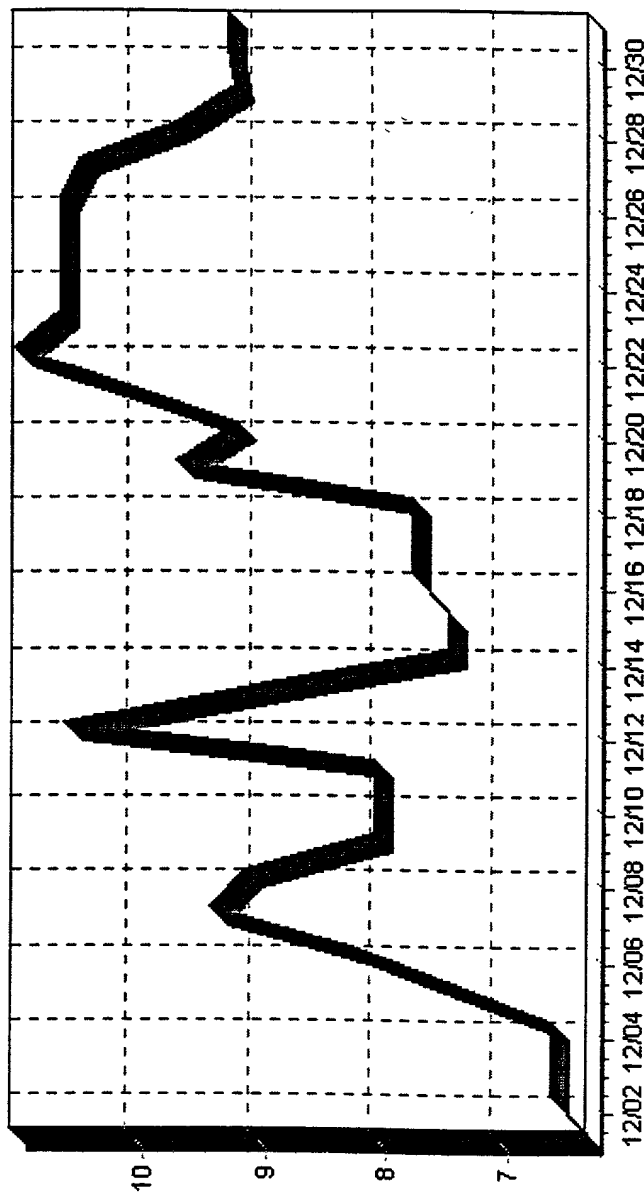
Index: Daily Gas Daily Midpoint El Paso Permian


Day	Price
12/01/2000	\$6.2100
12/02/2000	\$6.4900
12/03/2000	\$6.4900
12/04/2000	\$6.4900
12/05/2000	\$7.2900
12/08/2000	\$8.1600
12/07/2000	\$9.3100
12/08/2000	\$9.0400
12/09/2000	\$7.9600
12/10/2000	\$7.9600
12/11/2000	\$7.9600
12/12/2000	\$10.5150
12/13/2000	\$8.9550
12/14/2000	\$7.3450
12/15/2000	\$7.3550

Average 8.7053

Day

Graphical View





Version
(5.06)

02/23/2001 12:58:30 pm | SUSAN

HEC | Gas

December, 2000 | Accounting

Printer: Accounting Printer

Personal

Price Index

Company


Availability


Deals


Routing


Accounting


System


 Add or Update a Company...


 Add or Update a Contact Person...


 Add or Update a Contact...


 Add or Update Contract Products...


 Add or Update Contract Services...


 Setup Default Standard Reports...

 Add or Update a Contact Group...

 Company Reports...

 Start

 Energy Management ...




12:58 PM

END OF

T.D.2000" T.D.5660

Energy Management System



Version
(5.06)

02/23/2001 12:58:58 pm

HEC | Gas

December, 2000 | Accounting

Printer: Accounting Printer

Personal

Price Index

Company

Availability

Deals

Routing

Accounting

System


Enter Production Volumes...

Produce Production Confirms...

Availability Reports...

Start

Energy Management ...



12:58 PM

Version (5.06)

02/23/2001	01:01:10 pm.	SUSAN
------------	--------------	-------

HEC Gas	
1	1
2	2
3	3
4	4
5	5
6	6
7	7
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9	9
10	10
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12	12
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95	95
96	96
97	97
98	98
99	99
100	100

December, 2000 | Accounting

Deal Details - (Change)

Deal ID: 66028

Product Gas

Month: December / 2000

intrac...

3TEC OIL & GAS PURCHASE

Description:

Services

2000年 11月 11日

3TEC ENERGY

Created

12/23-31 3TEC

Marketing

Accounting Principles

3TEC ENERGY

Created

Rollover Rules | Correspondence

General	Volumes	Prices
General	Volumes	Prices

Their Contact:

Our Contact:

Description:

Comments:

學

Figure 6

Energy Management


 文部科学省
 教育部

三



100

三才

Version
(5.06)

02/23/2001 12:59:49 pm | SUSAN

HEC | Gas

December, 2000 | Accounting

Printer: Accounting Printer

Personal

Price Index

Company

Availability

Deals

Routing

Accounting

System

Route Volume...

Define Legs...

Leg History (Monthly Rates)...

Leg Daily Rates...

Pipes/Fields...

Meters/Wells...

Routing Reports...

Preferences

Propagate to End of Month ?

✓ Auto Adjust Changes ?

Start

Energy Management ...

12:59 PM

FIN. 461

Enter Pipe/Field Actuals

Month: ☒

Type: ☒

(Accounting Phase)

LookUp By ?

☒ Pipe ☐ Company

Columbia Gulf Transmission

Volume Allocation

☒ Auto Allocate Volume ☐ Use Volume Entered

Vol:

From:

Meter/Well	Description	Deal	Act. ?	Actuals	Company
4610	PARADISE (ONSHORE)	65105	<input checked="" type="checkbox"/>	15577.10	PARADISE
4639	PARADISE (ONSHORE)	65120	<input checked="" type="checkbox"/>	15577.10	PARADISE
4184	PARADISE (ONSHORE)	65050	<input checked="" type="checkbox"/>	15577.10	PARADISE
4184	PARADISE (ONSHORE)	65070	<input checked="" type="checkbox"/>	15577.10	PARADISE
P2046107	HIGHLAND (ONSHORE)	65182	<input checked="" type="checkbox"/>	15577.10	HIGHLAND
P2046107	HIGHLAND (ONSHORE)	65182	<input checked="" type="checkbox"/>	15577.10	HIGHLAND
P2046107	HIGHLAND (ONSHORE)	65182	<input checked="" type="checkbox"/>	15577.10	HIGHLAND
P2046107	HIGHLAND (ONSHORE)	65182	<input checked="" type="checkbox"/>	15577.10	HIGHLAND
P2046107	HIGHLAND (ONSHORE)	65182	<input checked="" type="checkbox"/>	15577.10	HIGHLAND
P2046107	HIGHLAND (ONSHORE)	65182	<input checked="" type="checkbox"/>	15577.10	HIGHLAND

Meter/Well:

Day	Norm	Actual
Dec 01	15577.10	15577.10
Dec 02	15577.10	15577.10
Dec 03	15577.10	15577.10
Dec 04	15577.10	15577.10
Dec 05	15577.10	15577.10
Dec 06	15577.10	15577.10
Dec 07	15577.10	15577.10
Dec 08	15577.10	15577.10
Dec 09	15577.10	15577.10
Dec 10	15577.10	15577.10
Dec 11	15577.10	15577.10
Dec 12	15577.10	15577.10
Dec 13	15577.10	15577.10
Dec 14	15577.10	15577.10
Dec 15	15577.10	15577.10
Dec 16	15577.10	15577.10
Dec 17	15577.10	15577.10
Dec 18	15577.10	15577.10
Dec 19	15577.10	15577.10
Dec 20	15577.10	15577.10
Dec 21	15577.10	15577.10
Dec 22	15577.10	15577.10
Dec 23	15577.10	15577.10
Dec 24	15577.10	15577.10
Dec 25	15577.10	15577.10
Dec 26	15577.10	15577.10
Dec 27	15577.10	15577.10
Dec 28	15577.10	15577.10
Dec 29	15577.10	15577.10
Dec 30	15577.10	15577.10
Dec 31	15577.10	15577.10

You have the option of either entering the daily actual volumes directly next to their respective day (right side list) OR to use the volume allocation panel (right center of the window).
Pipe/Field and meter/well actual totals at bottom should match your

Right click the meter/well grid to see other options

Energy Management System

Version (5.08)

02/23/2001 01:00:21 pm SUSAN

HEC | Gas

December, 2000 | Accounting

Printer: Accounting Printer

Personal

Price Index

Company

Availability

Deals

Routing

Accounting

System

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Monthly Status Exception Reason Codes...

Producer Control Center Messages...

Locations...

Processing Code Types...

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Application Images...

Security

Management Reports...

System Reports...

Standard Report Types...

Help...

About the Energy Management System...

Setup Users...

Setup System Functions...

Update User Security Rules...

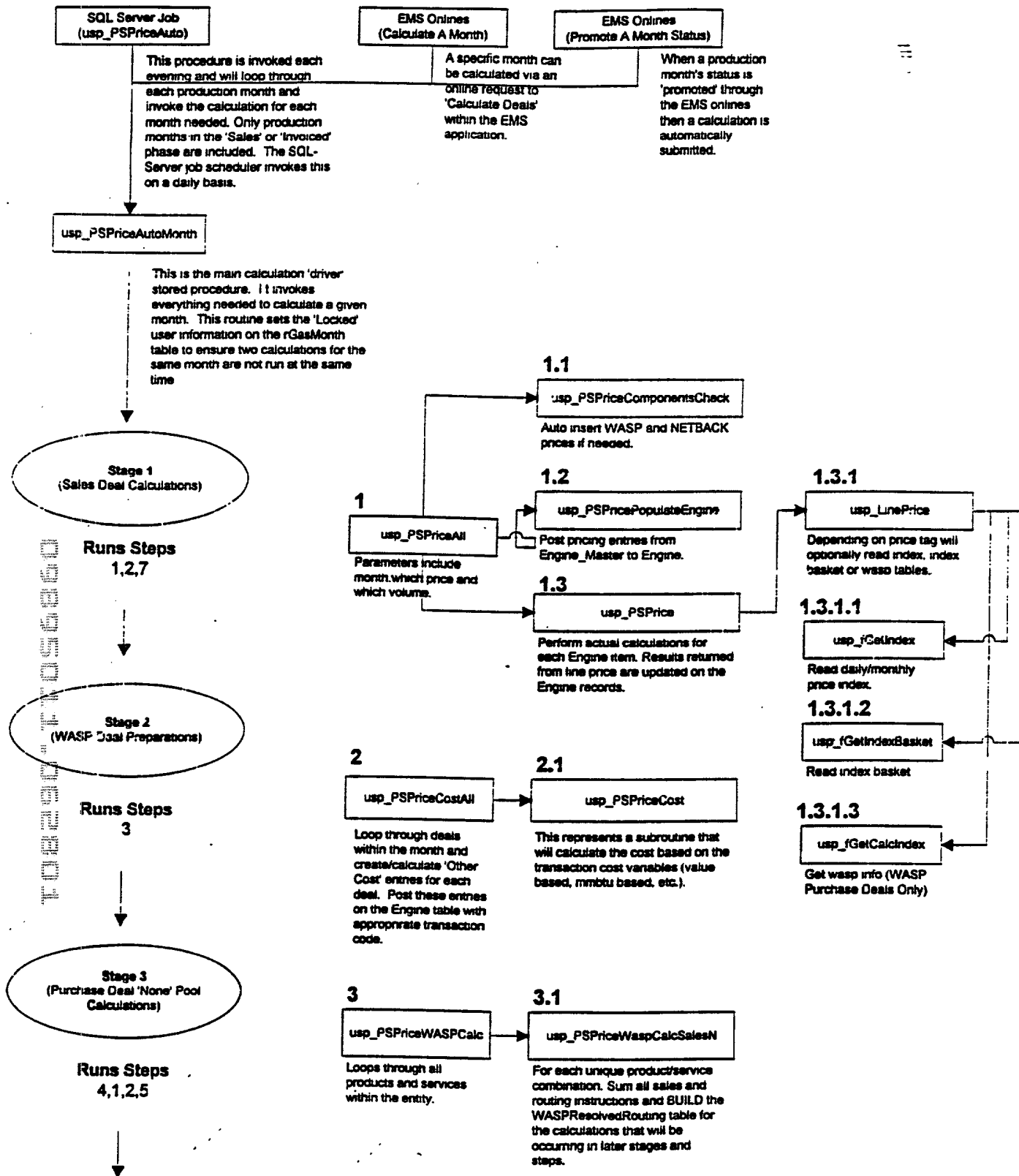
Start

Energy Management

System tray icons

1:00 PM

WASP Calculation Diagram (1 of 2)



continued on next page

FIG. 5A